REMARKS

This is a preliminary amendment in a RCE application. Please consider the following remarks in response to the Office Action mailed March 16, 2006. The application originally contained claims 1-21. Claims 12, 15, 20, and 21 have been cancelled. The claims presented for examination are claims 1-11, 13-14, and 16-19.

Applicants' Claimed Invention

Applicants' claimed invention is illustrated in Applicants original drawing FIG. 1 reproduced below.

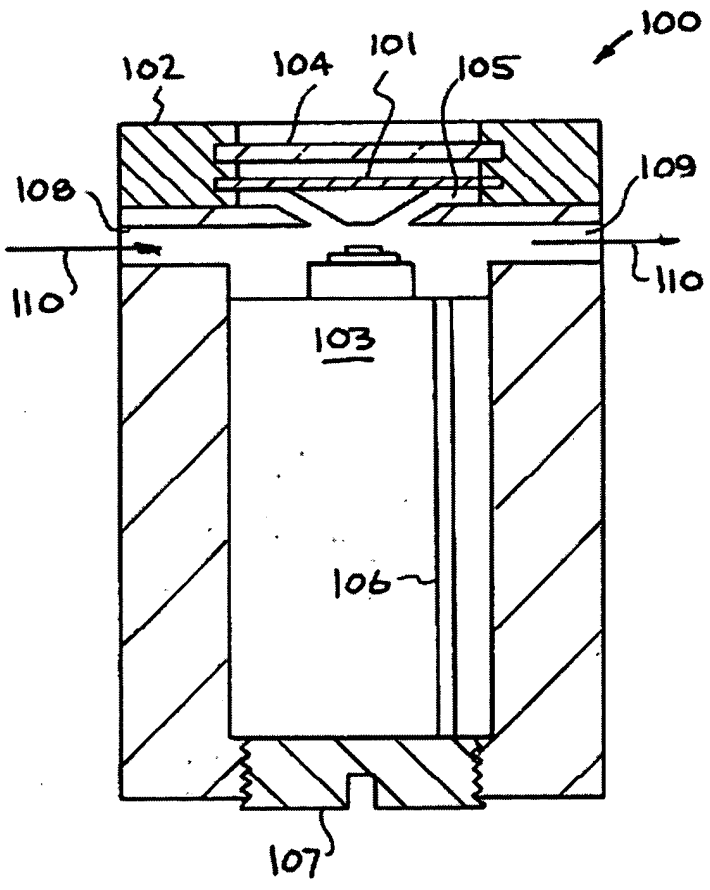

FIG. 1

Applicants' claimed invention is a variable flexure-based fluid filter apparatus 100 for filtering particles from a fluid 110. The apparatus 100 includes

a variable flexure-based fluid filter body, a fluid passage in the body, a fluid inlet 108 connected to the fluid passage, a fluid outlet 109 connected to the fluid passage, a flexure unit 101 connected to the passage, and an expandable piezo-electric stack 103. The expandable piezo-electric stack 103 is connected to the passage and is positioned opposite the flexure unit 101. A variable size passage is provided between the expandable piezo-electric stack 103 and the flexure unit 101. The piezo-electric stack 103 can be expanded for adjusting the size of the variable size passage for filtering the particles from the fluid 110. Expansion of the piezo-electric stack 103 provides deflection of the flexure unit 101.

A particle sequestering area 105 is connected to the fluid passage. The particle sequestering area 105 is located adjacent the expandable piezo-electric stack 103, the flexure unit 101, and the variable size passage. A window 104 in the body is operatively connected to the particle sequestering area 105. The window 104 allows visual inspection of the particle sequestering area 105.

35 USC 102 Rejection - Kornelsen

In numbered paragraph 1 of the Office Action mailed March 16, 2006, claims 1, 7-11, 16, and 17 were rejected under 35 U.S.C. 102(e) as being anticipated by the Kornelsen reference (US Patent No. 6,629,820). The Kornelsen reference shows a microfluidic flow control device illustrated by FIGURE 2 of the Kornelsen reference reproduced below.

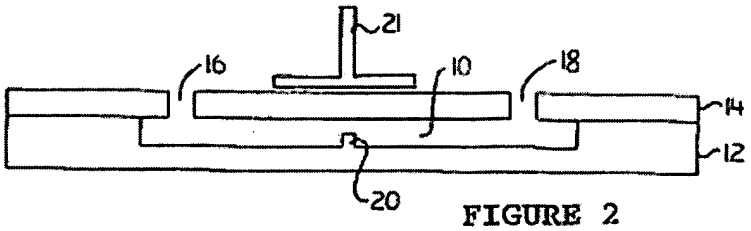

FIGURE 2

A channel 10 is formed between two plates 12 and 14. The inlet 16 and outlet 18 may be made by conventional methods such as etching and drilling. A

valve seat is formed by a weir 20 protruding from plate 12 on one side of the channel. The plates 12 and 14 are bonded together in conventional manner and the groove allows a small gap between the plates 12 and 14 to form the channel 10 and allow fluids to flow between the inlet 16 and outlet 18. The material of the top plate 14 at the location of the valve structure and extending on either side of the weir 20, as for example to the ports 16 and 18 is made sufficiently thin to be deformable into contact with the weir 20. Deformation the cover plate 14 can open or close the channel and thus have a valve action. Various force applicators 21 and equivalent methods may be used to apply the force to open and close the valve.

The Kornelsen Reference Does Not Anticipate Claims 1, 7-11, 16, and 17

Applicant has amended independent claims 1 and 11 presented for examination; therefore claims 1, 7-11, 16, and 17 are now presented in amended form. Applicant believes the invention claimed in amended claims 1, 7-11, 16, and 17 is not anticipated by the Kornelsen reference. The standard for a 35 USC §102 rejection is stated in *RCA Corp. v. Applied Digital Systems, Inc,* 221PQ 385, 388 (d. Cir. 1984) "Anticipation is established only when a single prior art reference discloses, either expressly or under principles of inherency, each and every element of a claimed invention." Applicant points out that the following elements of Applicants' amended claims 1, 7-11, 16, and 17 are not found in the Kornelsen reference:

> "a particle sequestering area connected to said fluid passage and located adjacent said flexure unit, said variable size passage, and said piezo-electric stack," or
>
> "a window in said body operatively connected to said particle sequestering area wherein said window allows visual inspection of said particle sequestering area," or

"providing a particle sequestering area connected to said variable size passage and located adjacent said flexure unit and said expandable piezo-electric stack," or

"providing a window operatively connected to said particle sequestering area wherein said window allows visual inspection of said particle sequestering area," or

"making a visual inspection of said particle sequestering area through said window to determine whether said particles are in said particle sequestering area."

Since the elements described above are not found in the Kornelsen reference, the Kornelsen reference would not support a 35 U.S.C. §102(e) rejection.

35 USC 103 Rejection - Kornelsen in View of Kyser et al

In numbered paragraph 2 of the Office Action mailed March 16, 2006, claims 3, 4, 13, and 14 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over the Kornelsen reference in view of the Kyser et al reference (US Patent No. 4,506,276).

Applicant has amended the parent claims of rejected claims 3, 4, 13, and 14; therefore claims 3, 4, 13, and 14 are now effectively presented in amended form. Applicants believe that amended claims 3, 4, 13, and 14 are patentable and that the Kornelsen and Kyser et al references would not support a 35 U.S.C. §103(a) rejection. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. §103(a) include "Ascertaining the differences between the prior art and the claims at issue."

The differences between the primary Kornelsen reference and Applicants' invention defined by amended claims 3 and 4 which depend from independent claim 1 and claims 13, and 14 which depend from independent claim 11 includes

the fact that the following elements of the relevant claims are not found in the primary Kornelsen reference:

> "a particle sequestering area connected to said fluid passage and located adjacent said flexure unit, said variable size passage, and said piezo-electric stack," or
>
> "a window in said body operatively connected to said particle sequestering area wherein said window allows visual inspection of said particle sequestering area," or
>
> "a strain gauge operatively connected to said piezo-electric stack and said flexure unit that provides feedback on said deflection of said flexure unit," or
>
> "a set screw operatively connected to said piezo-electric stack," or
>
> "providing a particle sequestering area connected to said variable size passage and located adjacent said flexure unit and said expandable piezo-electric stack," or
>
> "providing a window operatively connected to said particle sequestering area wherein said window allows visual inspection of said particle sequestering area," or
>
> "making a visual inspection of said particle sequestering area through said window to determine whether said particles are in said particle sequestering area," or
>
> "wherein said step of setting said size of said variable size passage is accomplished using said piezo-electric stack and said strain gauge operatively connected to said piezo-electric stack," or
>
> "providing a set screw operatively connected to said piezo-electric stack."

The Kyser et al reference fails to show how the missing elements of amended claims 3, 4, 13, and 14 identified above could be provided in the Kornelsen reference device. There is no teaching of combining the Kornelsen reference and the Kyser et al reference to meet Applicants' amended claims 3, 4, 13, and 14. Under MPEP §2142, there must be some suggestion or motivation,

either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. It should be noted that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In *re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

There is no combination of the Kornelsen reference and the Kyser et al reference that would produce the combination of elements of Applicants' amended claims 3, 4, 13, and 14. Since there is no suggestion or motivation to combine the references to produce Applicants' invention, a 35 U.S.C. §103(a) rejection of Applicants' claims would not be appropriate. Thus, the combination of references fails to support a rejection of the claims under 35 U.S.C. §103 and the rejection should be withdrawn.

35 USC 103 Rejection - Kornelsen in View of Wiget

In numbered paragraph 3 of the Office Action mailed March 16, 2006, claims 5, 6, and 15 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over the Kornelsen reference in view of the Wiget reference (US Patent No. 4,834,534).

Applicant has amended the parent claims of rejected claims 5 and 6 and cancelled claim 15; therefore claims 5 and 6 are now effectively presented in amended form. Applicants believe that amended claims 5 and 6 are patentable and that the Kornelsen, and Wiget references would not support a 35 U.S.C. §103(a) rejection. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. §103(a) include "Ascertaining the differences between the prior art and the claims at issue."

The differences between the primary Kornelsen reference and Applicants' invention defined by amended claims 5 and 6 includes the fact that the following elements of amended claims 5 and 6, which depend from independent claim 1, are not found in the primary Kornelsen reference:

> "a particle sequestering area connected to said fluid passage and located adjacent said flexure unit, said variable size passage, and said piezo-electric stack," or
>
> "a window in said body operatively connected to said particle sequestering area wherein said window allows visual inspection of said particle sequestering area," or
>
> "wherein said window operatively connected to said particle sequestering area is located opposite said piezo-electric stack," or
>
> "wherein said window is a sapphire window."

The Wiget reference fails to show how the missing elements of amended claims 5 and 6 identified above could be provided in the Kornelsen reference device. There is no teaching of combining the Kornelsen reference and the Wiget reference to meet Applicants' amended claims 5 and 6. Under MPEP §2142, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. It should be noted that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In *re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Since there is no suggestion or motivation to combine the references to produce Applicants' invention, a 35 U.S.C. §103(a) rejection of Applicants' claims would not be appropriate.

There is no combination of the Kornelsen reference and the Wiget reference that would produce the combination of elements of Applicants'

amended claims 5 and 16. Since there is no suggestion or motivation to combine the references to produce Applicants' invention, a 35 U.S.C. §103(a) rejection of Applicants' claims would not be appropriate. Thus, the combination of references fails to support a rejection of the claims under 35 U.S.C. §103 and the rejection should be withdrawn.

35 USC 103 Rejection - Kornelsen in View of Gruber et al

In numbered paragraph 4 of the Office Action mailed March 16, 2006, claims 18 and 19 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over the Kornelsen reference in view of the Gruber it al reference (US Patent No. 4,834,534).

Claims 18 and 19 depend from independent claim 11. Applicant has amended independent claim 11; therefore claims 18 and 19 are in effect now presented in amended form. Applicants believe that amended claims 18 and 19 are patentable and that the Kornelsen, and Gruber et al references would not support a 35 U.S.C. §103(a) rejection. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. §103(a) include "Ascertaining the differences between the prior art and the claims at issue."

The differences between the primary Kornelsen reference and Applicants' invention defined by claims 18 and 19 which depend from independent claim 11 includes the fact that the following elements of amended claims 18 and 19 are not found in the primary Kornelsen reference:

> "providing a particle sequestering area connected to said variable size passage and located adjacent said flexure unit and said expandable piezo-electric stack," or
>
> "providing a window operatively connected to said particle sequestering area wherein said window allows visual inspection of said particle sequestering area," or

"making a visual inspection of said particle sequestering area through said window to determine whether said particles are in said particle sequestering area," or

"wherein said particles are beads and including the step of attaching optically labeled tags to said beads," or

"wherein said particles are beads and including the step of attaching antibodies or antigens to said beads."

The Gruber it al reference fails to show how the missing elements of amended claims 18 and 19 identified above could be provided in the Kornelsen reference device. There is no teaching of combining the Kornelsen reference and the Gruber et al reference to meet Applicants' amended claims 18 and 19. Under MPEP §2142, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. It should be noted that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In *re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Since there is no suggestion or motivation to combine the references to produce Applicants' invention, a 35 U.S.C. §103(a) rejection of Applicants' claims would not be appropriate.

There is no combination of the Kornelsen reference and the Gruber et al reference that would produce the combination of elements of Applicants' amended claims 18 and 19. Since there is no suggestion or motivation to combine the references to produce Applicants' invention, a 35 U.S.C. §103(a) rejection of Applicants' claims would not be appropriate. Thus, the combination of references fails to support a rejection of the claims under 35 U.S.C. §103 and the rejection should be withdrawn.

35 USC 103 Rejection - Kornelsen in View of Gamble et al

In numbered paragraph 5 of the Office Action mailed March 16, 2006, claim 2 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over the Kornelsen reference in view of the Gamble et al reference (US 2002/0045287).

Claim 2 depends from independent claim 1. Applicant has amended independent claim 1; therefore claim 2 is now effectively presented in amended form. Applicants believe that amended claim 2 is patentable and that the Kornelsen and Gamble et al references would not support a 35 U.S.C. §103(a) rejection. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. §103(a) include "Ascertaining the differences between the prior art and the claims at issue."

The differences between the primary Kornelsen reference and Applicants' invention defined by claim 2 includes the fact that the following elements of claim 2, which depends from independent claim 1, are not found in the primary Kornelsen reference:

> "a particle sequestering area connected to said fluid passage and located adjacent said flexure unit, said variable size passage, and said piezo-electric stack," or
>
> "a window in said body operatively connected to said particle sequestering area wherein said window allows visual inspection of said particle sequestering area," or
>
> "wherein said flexure unit is a steel flexure unit."

The Gamble et al reference fails to show how the missing elements of amended claim 2 identified above could be provided in the Kornelsen reference device. There is no teaching of combining the Kornelsen reference and the Gamble et al reference to meet Applicants' amended claim 2. Under MPEP §2142,

there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. It should be noted that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In *re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Since there is no suggestion or motivation to combine the references to produce Applicants' invention, a 35 U.S.C. §103(a) rejection of Applicants' claims would not be appropriate.

There is no combination of the Kornelsen reference and the Gamble et al reference that would produce the combination of elements of Applicants' amended claim 2. Since there is no suggestion or motivation to combine the references to produce Applicants' invention, a 35 U.S.C. §103(a) rejection of Applicants' claims would not be appropriate. Thus, the combination of references fails to support a rejection of the claims under 35 U.S.C. §103 and the rejection should be withdrawn.

SUMMARY

The undersigned respectfully submits that, in view of the foregoing amendments and the foregoing remarks, the rejections of the claims raised in the Office Action mailed March 16, 2006 have been fully addressed and overcome. The present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that the claims be allowed, and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,

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Livermore, California